BEST BUY HOSPITALS

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BEST BUY HOSPITALS

Introduction

The term 'Best Buy' was first used in 1967, when a mandate was given to the Department of Health and Social Security project team. It called for 'the utmost economy in whole hospital design and construction . . . consistent with maintaining acceptable medical and nursing standards . . . and a proper balance between capital and running costs'. The two words, 'Best Buy', summed up the purpose of the exercise.

The planning principles were:

1 that as many patients as possible should be investigated and treated in the community by family doctors, helped by local authority nurses and health visitors

2 that when admission was essential, the stay should be made as short as possible by good management and planned early discharge

Six objectives

Function	to provide a basic hospital service which complements integrated community health services in an area
Economy	to build hospitals as economically as possible without creating increased maintenance and revenue costs
Efficiency	to design hospitals as complete units, placing individual departments in good functional relationship with one another. This ensured that when patients had to receive hospital attention, it should be possible by the maximum use of out-patient, diagnostic and treatment facilities, including day beds, to treat more of them as out-patients
Quality	to build hospitals to a standard no higher than that required by clinical and amenity needs
Environment	to create hospitals which engender a sense of well-being for patients and staff
Speed	to design and build hospitals as rapidly as possible, making optimum use of planners and designers

So successful was the team in achieving the objectives that when the first two hospitals – one at Bury St Edmunds and the other at Frimley – went out to tender in 1969, the contract price of each was more than 30 per cent below the cost limit set at that time for hospitals of orthodox design planned to serve a population of the same size.
The favourable reception granted to these two hospitals has now led to the evolution of a further version for introduction at King's Lynn and subsequent use in other places, including Great Yarmouth and Redditch.

Principles of Best Buy Planning

Intensive use The functional efficiency of the hospital depends on the premise that diagnostic and treatment facilities must satisfy the needs not only of the hospital, but also the community itself, making the patients' stay in hospital as brief as possible.

Flexible layout In-patient beds are located in a continuous band around the perimeter of the hospital. There is a central entrance at the front of the hospital for in patients, admissions and visitors. Separate entrances are provided for specific purposes, including accident and emergency. The main hospital street encircles the 'core' on each floor, and at intervals around the street there are staircase links. Lifts are centrally located.

Functional relationships Particular attention has been given to the best working relationships between departments and areas within the hospital, which was planned as a coherent unit. Wherever possible some overlapping of functions is allowed for. The education centre is one example, because it provides full facilities for the school of nursing and the postgraduate medical centre, while permitting other forms of staff training and seminars. Application of this principle for all departments has resulted in space saving amounting to over 20 per cent of the space allowances in conventional hospital construction.

King's Lynn, Norfolk
Located on the south side of the Wash, serving a large rural area

Redditch
Worcestershire
A town within easy reach of Birmingham with motor-car, cycle and other industrial interests

Bury St Edmunds
West Suffolk
A rural area served by this historic county town

Great Yarmouth
Norfolk
A seaside resort and centre of the English herring-fishing industry

Frimley, Surrey
An urban area in the London commuter belt

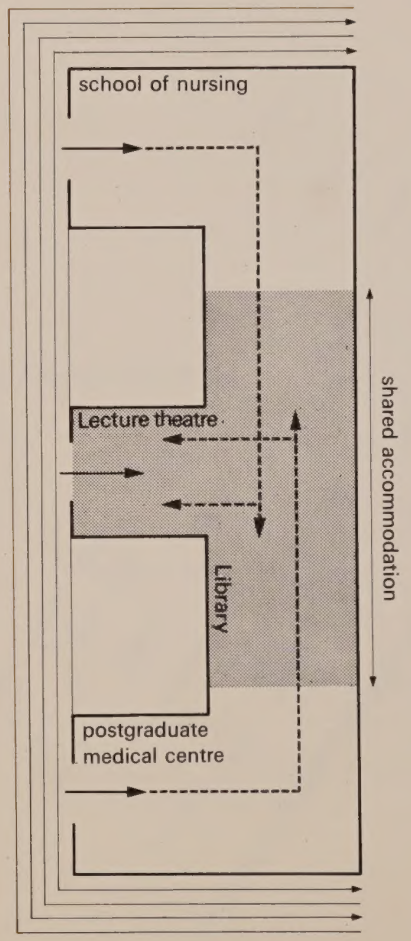
Integrated services

The basic hospital provides a comprehensive diagnostic and treatment service for a catchment population of up to 170,000. Acute in-patient beds are provided in a ratio of 2 per 1,000 population. There are, in addition, an appropriate number of beds for maternity and other purposes.

The most up-to-date concepts of patient-care have been incorporated, including an intensive therapy unit and facilities for accommodating patients according to their nursing dependency. A high standard of general amenity has been provided for patients and their visitors.

In order to ensure a continuous and efficient patient-care system, the hospital depends on a well-developed community health service. Representatives of this branch of the service have played a part in the development of the philosophies and plan.

Special attention has been paid to the various needs of all staff grades, including education, recreation and welfare.



Education Centre

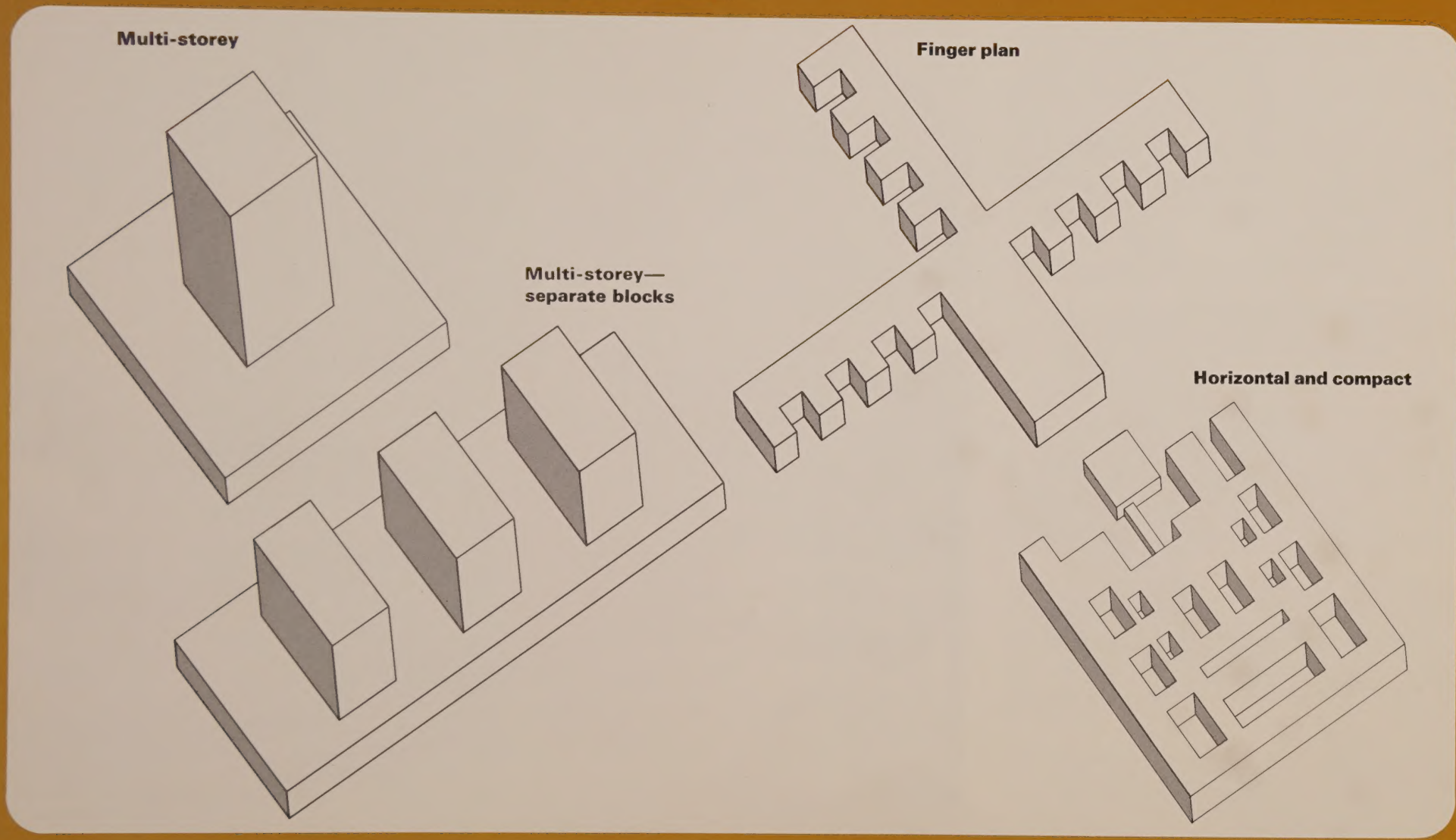
Typical ward bays

Shape studies

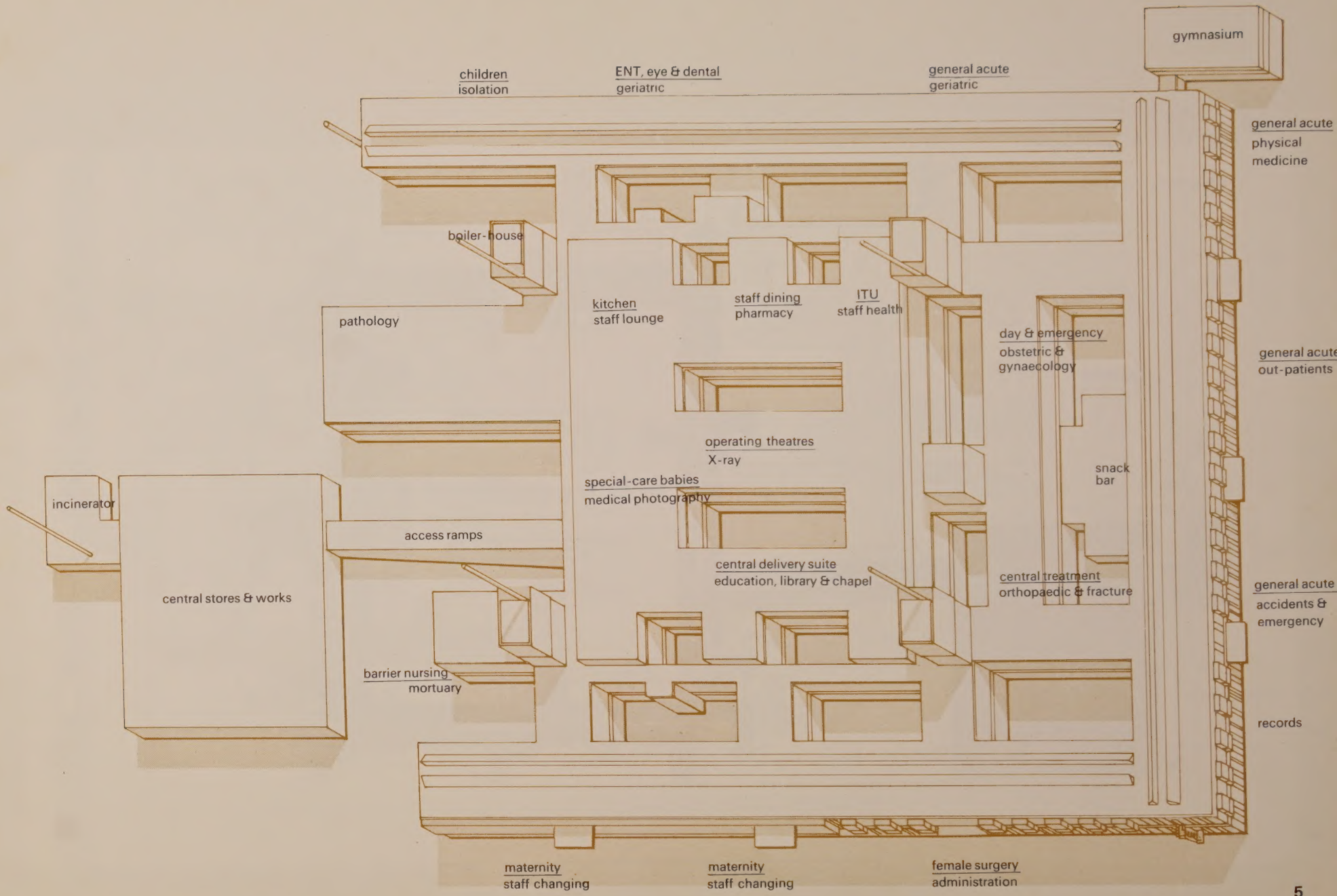
Extensive studies carried out by the Department of Health and Social Security show that additional costs are incurred when ward floors are stacked vertically one above the other in a multi-storey building. This type of building not only tends to be inflexible in clinical function, but also makes it difficult to deploy available staff to best advantage for the patients.

The horizontal 'finger plan' is much cheaper, but this, too, fails to give an economic functional layout with optimal departmental relationships. A low rise, wide-spread building shape involves the risk of extending lines of communication between the wards and their supporting services.

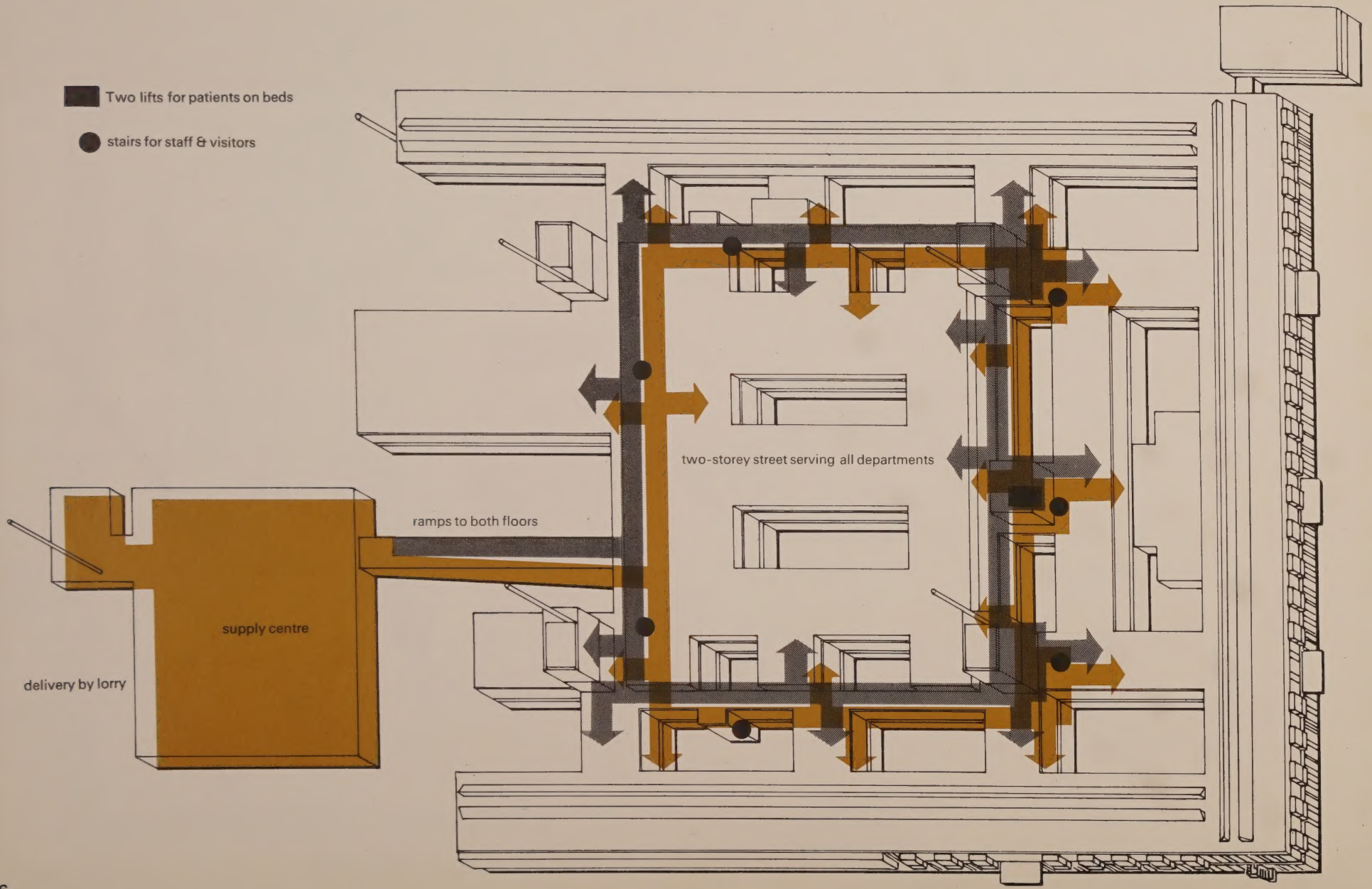
The Department of Health and Social Security eventually arrived at a horizontal compact square layout on two floors, penetrated by numerous courts to provide natural light and ventilation.



Plan of whole hospital

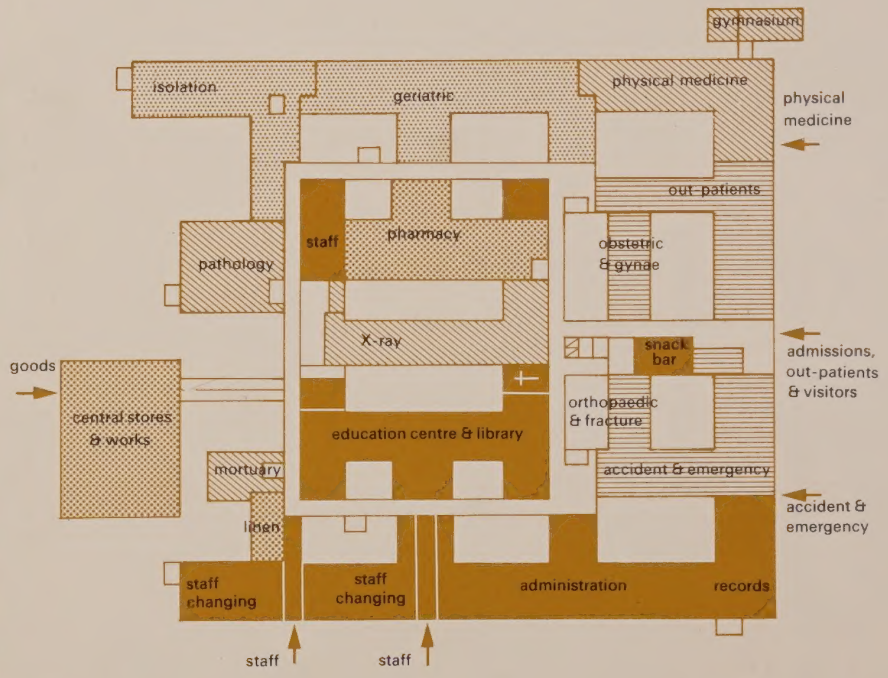


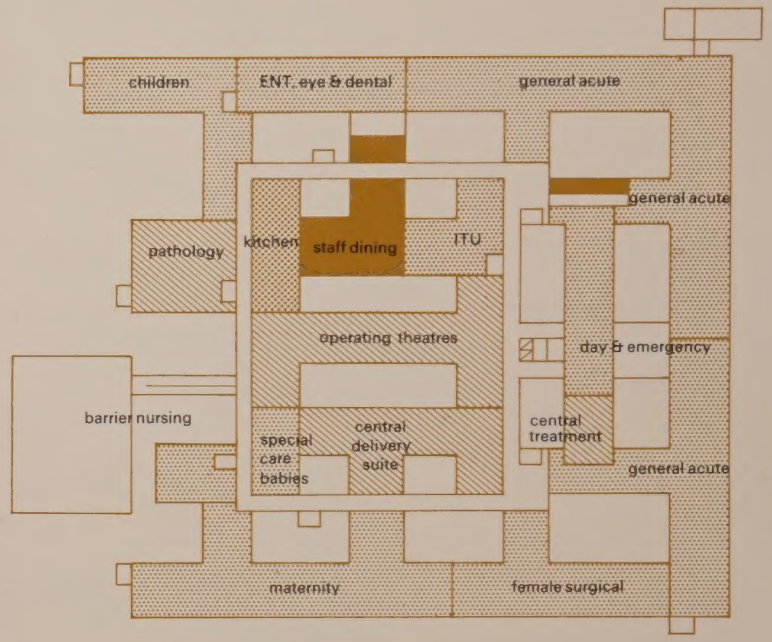
Communications and supplies


Two lifts for patients on beds
stairs for staff & visitors
two-storey street serving all departments
ramps to both floors
supply centre
delivery by lorry

Ground floor

First floor





in-patient services

diagnostic & treatment

consultation & examination

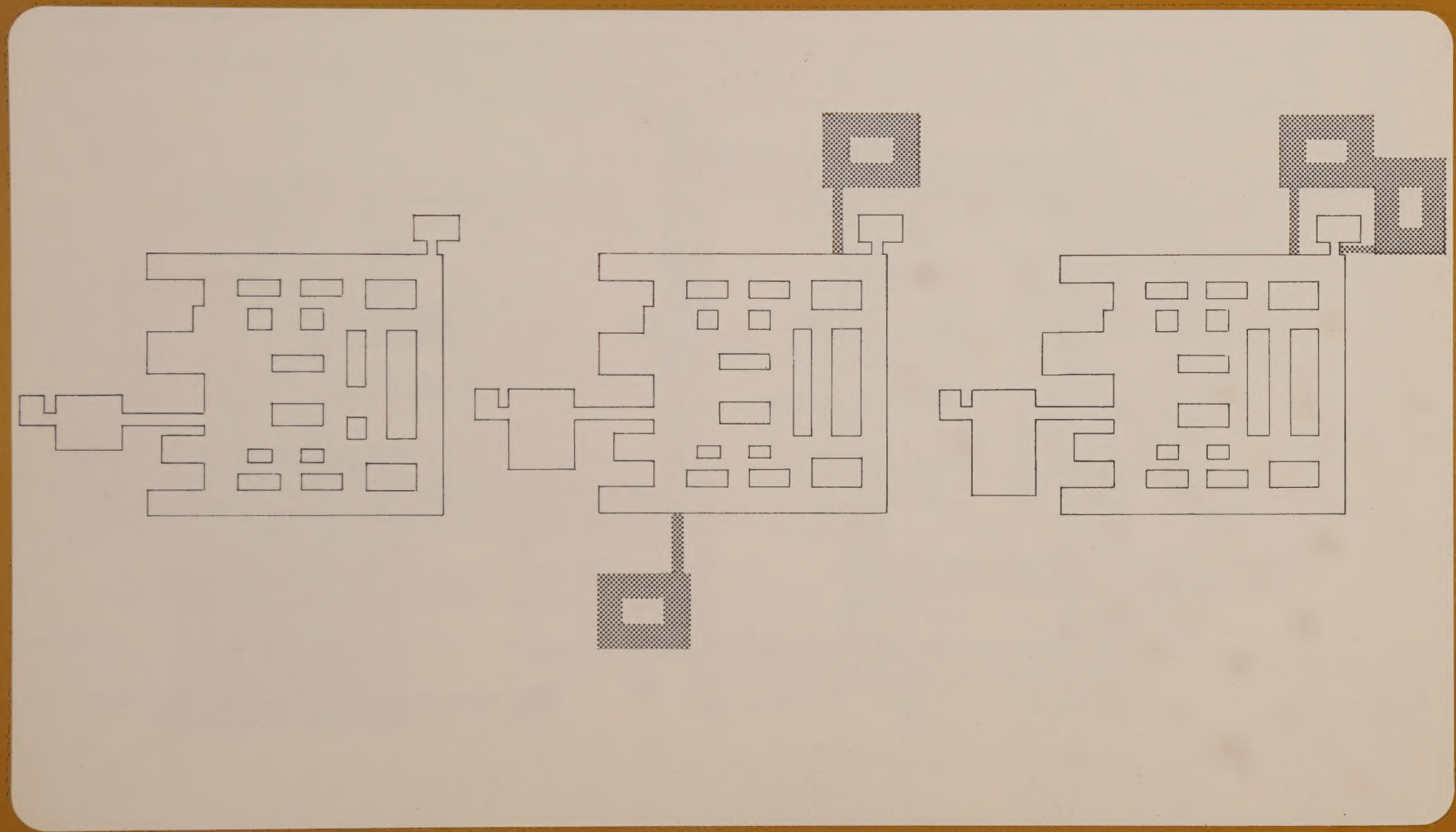
administration, education & staff

supply & disposal services

Adaptability of Best Buy to expanding needs

The basic hospital provides in-patient and out-patient diagnostic and treatment facilities, and the necessary complement of acute beds, including geriatric assessment beds. It is assumed that requirements for laundry, sterile supplies and similar services will always be met from a separate industrial zone. In the later design the pathology department and the supply block have been extended in order to meet changing needs.

To provide a comprehensive hospital service, annexes can be added to supply the area requirements for psychiatric beds and day hospital places, long-stay geriatric and psychogeriatric beds, geriatric day places and adult and children's mental handicap beds. Annexes of this type may be standard departments, or they can be designed on an *ad hoc* basis to suit the catchment area.



Amenity

The hospital interior has been designed and all equipment selected to provide an efficient hospital which generates an atmosphere of well-being.

Environment

Internal courts have been landscaped and existing trees preserved in order to create acceptable surroundings throughout the cycle of the seasons.

Quality

Special attention has been given to the design of standard components for typical assemblies like sanitary fittings, doors, screens and storage units.

Building and engineering

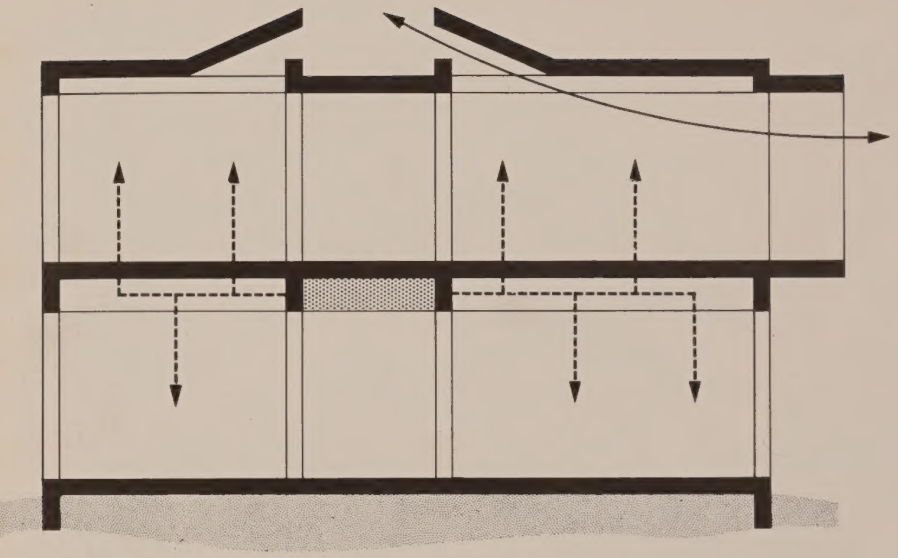
A co-ordinated approach supported by extensive studies has resulted in making overall economies in building and engineering design. This led to a compact layout on two floors to provide good departmental relationships.

The structure of the building consists of a precast concrete two-storey frame down the centre of the block linked by spine beams with concrete trough-floor units spanning on to outer ring beams and resting on load bearing aerated concrete wall units. Although this is the choice of the Department of Health and Social Security in current practice, a variety of materials for the load-bearing walls can be used, depending on the local availability of materials and labour.

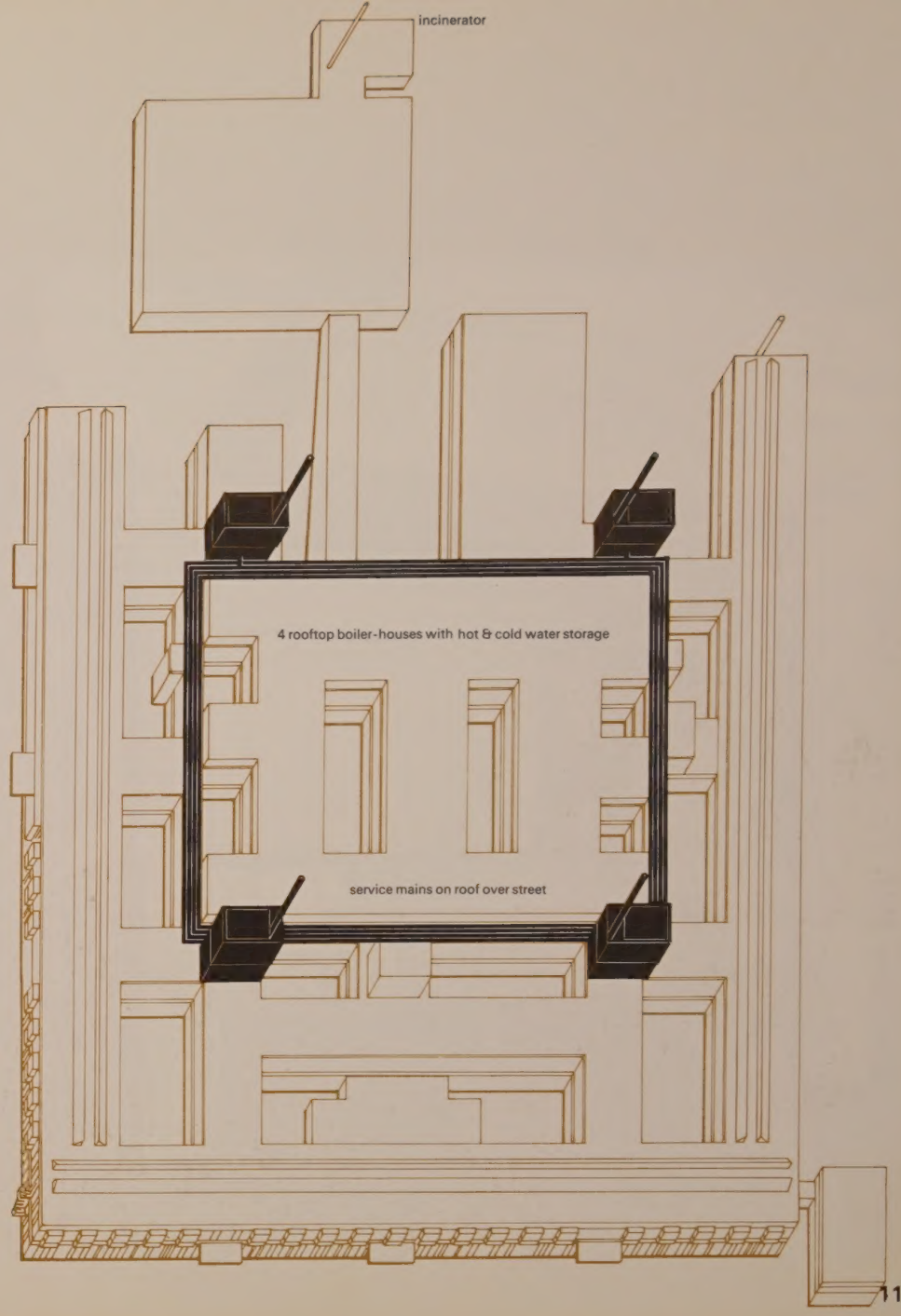
Cantilevered bay windows in wards provide sitting-out areas for patients, and the use of courtyards and clerestory lights has resulted in economies in mechanical ventilation, air conditioning and artificial lighting.

Areas with a high concentration of engineering are grouped in, or close to, the core of the building. The limited steam requirement in the hospital is the result of the location elsewhere of the laundry and other high steam-consuming services. It has also meant economies in thermal demand. Such demands are met by low-pressure hot-water boilers located on the roof of the building. There are four units, one at each corner of the building, and each is integrated with hot- and cold-water storage.

All engineering services are distributed in the ceiling of the ground floor corridor, feeding up to the first floor and down to the ground floor.

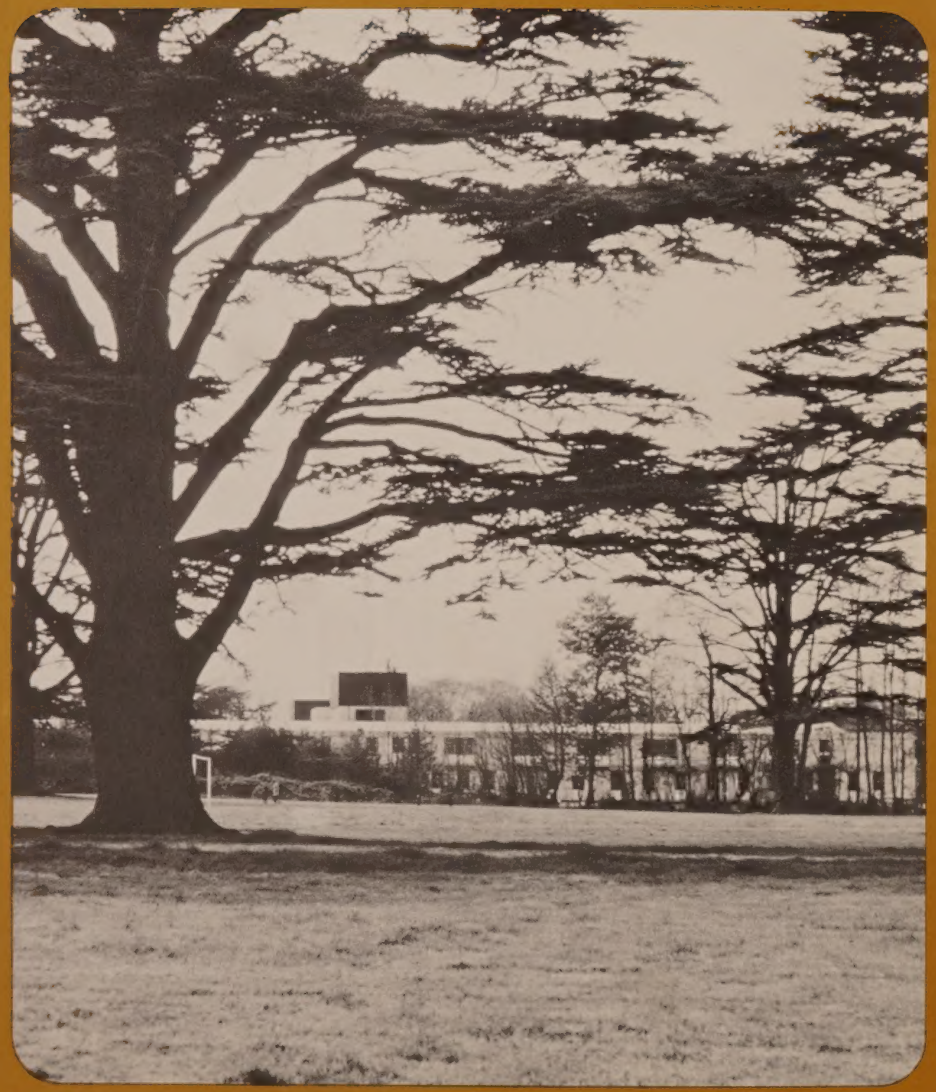


Typical section



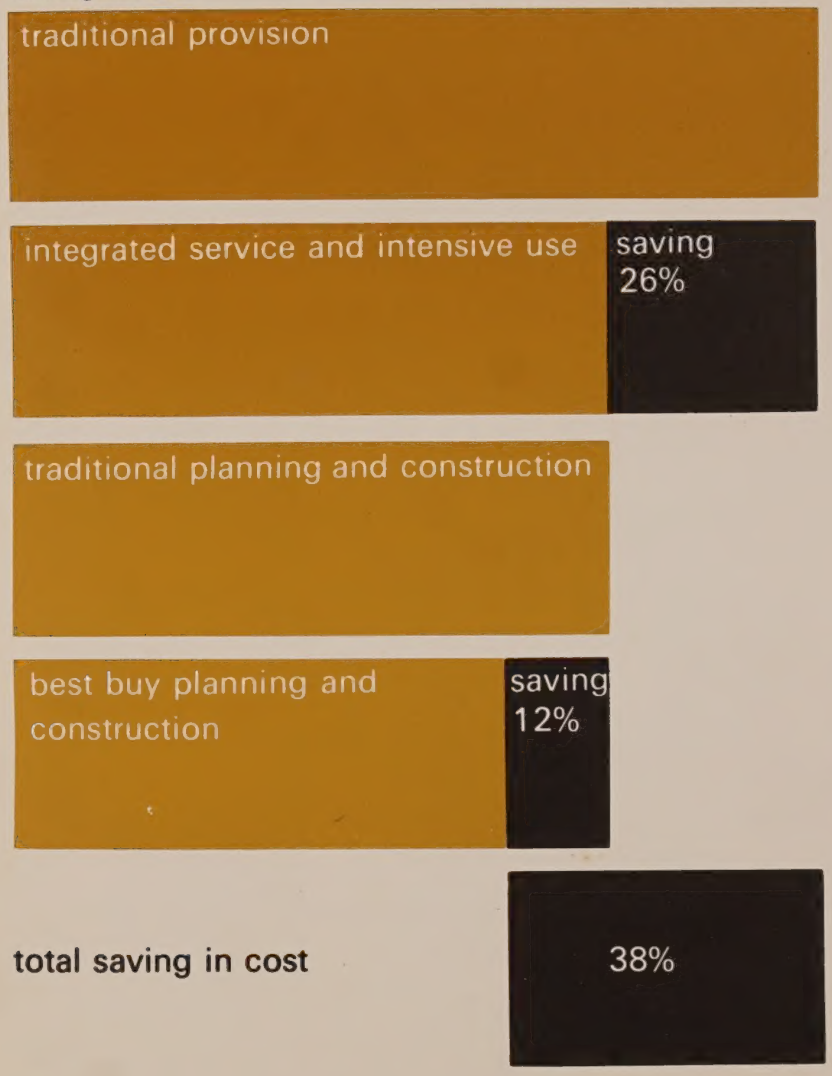
Roof-top engineering services

Staff base



The environment is important

Savings in cost



Selected statistics (Mark I)

Estimated maximum demand for heating/hot water	5·25 megawatts (18 million btu/h)
Estimated electrical maximum demand	1,000 kW
Water storage	318,000 litres (70,000 gallons divided between four roof-top tanks – sufficient for 24 hours' use)
Lighting	mainly fluorescent (colour corrected in ward and clinical areas), otherwise tungsten
Communications	automatic telephone exchange with 350 extensions, also used for initiating fire alarms. Self-actuating alarms on all vital installations, patient-nurse calls by standard light-buzzer system; staff location by means of induction loop with pocket receivers
Piped services	oxygen and suction; approximately 220 pairs of outlets
Floor areas (approximate)	
District general hospital	29,600 m² (319,000 sq ft)
Residential and amenities building	3,600 m² (39,000 sq ft)
Total floor area	33,200 m² (358,000 sq ft)
Site area (including surface car parking)	10·5 ha (26 acres)
Contract sum (Tender July 1969)	£3,100,000
Contract period	33 months

Functional content of Mark II building (package) and annexes

Type and Location	Department	Complement	Remarks
A In-patients: Package			
Upper floor: core	Intensive therapy/Coronary care	8 beds (incl. 2 singles)	Adjoining recovery
perimeter band	Children's wing	24 beds (incl. 8 singles)	With integrated play space and parents' accommodation
	ENT/eye/dental	37 beds (incl. 3 singles)	4 beds in 'swing' bay adjoining children's wing
	General acute ward units (total 7)	238 beds (incl. 4 singles per unit)	These 8 units are paired for access and supporting rooms
	Female surgical unit (next to Maternity)	21 beds (incl. 3 singles)	
	Maternity: Ante- and post-natal	74 beds (incl. 8 singles)	Some singles may become extra nurseries
	Barrier nursing	7 beds (all self-contained plus cot rooms)	One room equipped for normal delivery
	[Special-care Baby unit	.....20 places]	
Lower floor	Isolation	20 beds (all self-contained)	6 rooms have plenum ventilation
	Geriatric assessment and rehabilitation	52 beds (incl. 6 singles and twin)	Corridor link with day hospital and annexe
	Package basic total	481 beds	
In-patients: Annexes	Geriatric longer-stay	160 beds (incl. singles)	On 2 floors; size can be varied
	[Day hospital	.....60 places]	A separate linked building
	Psychiatric	95 beds	Integrated accommodation by conversion of existing building
	[Day hospital	.....120 places]	
		Note: The design is flexible enough for an additional number of single- and two-bedded rooms to be substituted for private and semi-private patient use. This would result in a reduction in the total number of beds	
B Day or short-stay patients			
Upper floor: core	Day and emergency unit	20 beds (incl. 4 singles)	Adjoining Central Treatment rooms
perimeter	Children's wing	4 beds	
C Out-patients			
Ground floor	Obstetric/gynaecology clinic	8 consulting/examination rooms	Includes facilities for mothercraft classes
	Dental clinic	2 surgeries and 1 stand-by surgery	Includes recovery room and dental workshop/laboratory with supporting facilities
	Eye clinic	2 consulting/examination rooms	
	Other special and all general clinics	12 consulting/examination rooms	
	Fracture/trauma clinics (Orthopaedic)	8 consulting/examination rooms	
		1 plaster room	
	Resuscitation etc.	1 main room, 2 treatment rooms	*en suite*
	Accident and emergency	5 treatment rooms, 7 cubicles	
D Diagnosis and treatment			
Upper floor: core	Operating department	7 theatres plus recovery area	6 theatres *en suite*, 1 emergency
	Central delivery suite	8 normal delivery beds	
		4 observation/first-stay beds	adjacent SCBU barrier-nursing and main maternity ward
		3 abnormal delivery rooms	
	Central treatment	5 rooms	Adjoining 20-bed day and emergency unit
Ground floor	X-ray department	7 general-purpose rooms	Also facilities for ultrasonic and thermography
	Medical photography	A department	Adjoins the education centre
	Mortuary	3 *post-mortem* tables, 36-place body store	Includes 1 isolation table
	Pathology	A department	Full area service, including isotopes
	Physical medicine	A department	Includes gymnasium and hydrotherapy pool
E Administration			
Ground floor	Hospital management	All necessary offices and services (also staff health clinic).	Does not include group offices
	Nursing administration	Central and dispersed offices	
	Medical administration	13 consultants' offices *en suite*	Plus others dispersed
	Medical records	Offices, stores etc. as required	
	Non-resident staff changing	A unit	Individual lockers (1,243)
	Main entrance, reception concourse		
	shops, bank and other facilities		
	Education centre	200-place department	Nurse training school, midwifery school, postgraduate medical centre and library
	Chapel	40 places	
F Supporting services	Catering	Kitchen: 1,600 meals	With patient tray service
		Staff dining: 280 places	Plus a separate staff coffee lounge
		Snack bar: 100 places	In concourse for use of staff and visitors
	Pharmacy	A department	Modified area service
	Central stores	An external unit	Ramps to upper and ground floors
	Works	Maintenance workshops and offices	
		Refuse disposal, crusher, incinerator etc.	With central stores
		4 boilers	Roof-top
		Plant rooms etc.	As required

Ward corridor

Roof-top engineering services

Consultants

This brochure summarises the hospital design work on which an experienced Department of Health and Social Security team has been engaged in association with a private architect and other professional consultants.

Additional information

Specific enquiries about the application of the Best Buy technique of hospital construction and the utilisation of British technical expertise should be addressed to

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Industries and Exports Branch
Supply Division
14 Russell Square
London WC1B 5EP
Telephone 01-636 6811, extension 24
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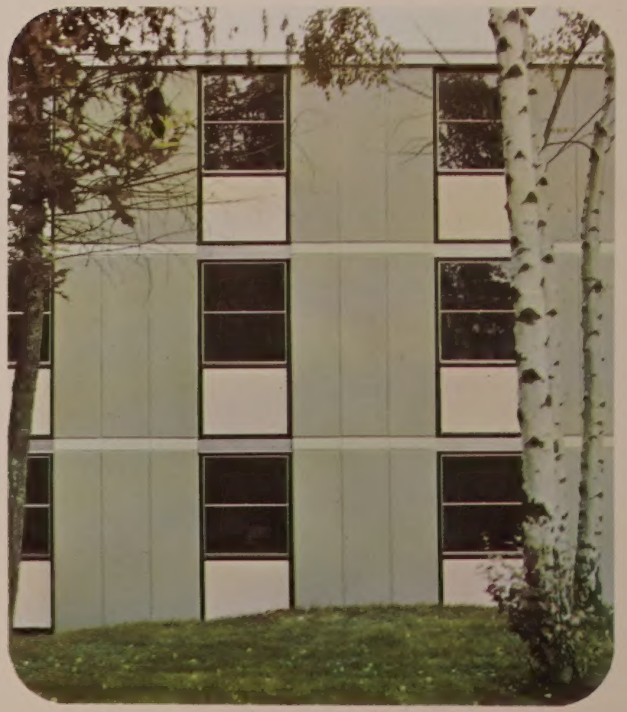
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